

Operation
AND
Maintenance

INSTRUCTION BOOK
FOR **D** SERIES
KLUGE PRESSES

The
Operation
and
Maintenance
of your
D Series Kluge

Brandtjen & Kluge, Inc.

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INSTRUCTION MANUAL FOR THE "D" SERIES PRESS

FOREWORD

Our thought in preparing this book has been to pass on to you in words and pictures the main points covering the care and operation of your Kluge Automatic Press and Feeder.

To us here at Brandtjen & Kluge, for well over a quarter of a century, our foremost objective has been to build the finest printing machinery we could manufacture.

Sturdy construction and durability, coupled with brilliant performance, has always been our goal in the building of this precision made equipment. We know, when the proper care is taken, that the utmost in service, satisfaction through use, and economy of operation is going to be found in every product bearing the Kluge name.

It is our hope that you will carefully study this book so that you may receive the maximum results and lasting service from the Kluge equipment you have installed.

We have built a precision machine. Its performance depends on the care you give it.

HOW TO OPERATE . . .

The principles of KLUGE operation make it an automatic press easy to set and operate. The feeding and delivery are both accomplished by suction. The simplicity of Kluge operation makes it practical on short as well as long runs and every job from light weight to heavy weight stock, printed on a platen press, is handled easily when automatically fed with a KLUGE.

If you are printing a 1½x3 inch card on the 10x15 or full sheet on the 12x18 you can count on the KLUGE feeding the job . . . in fact oversize sheets extending over the top of the platen can be fed, which makes the preferred dip-feeding of letter-heads a simple job for the 10x15.

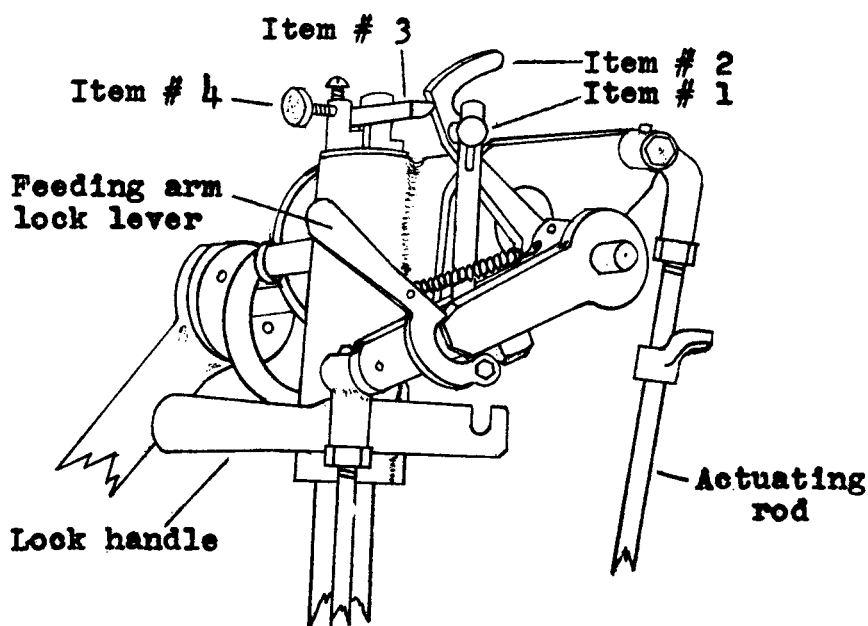
On the pages that follow we are picturing the more important steps in the operation and care of your KLUGE equipment. A careful study of the pages that follow should enable you to operate your KLUGE successfully on the full range of stock.

1. OPEN THE MAGAZINE

Lift the locking handle located on the left leg of the magazine, and swing the magazine through a one quarter turn to the right.

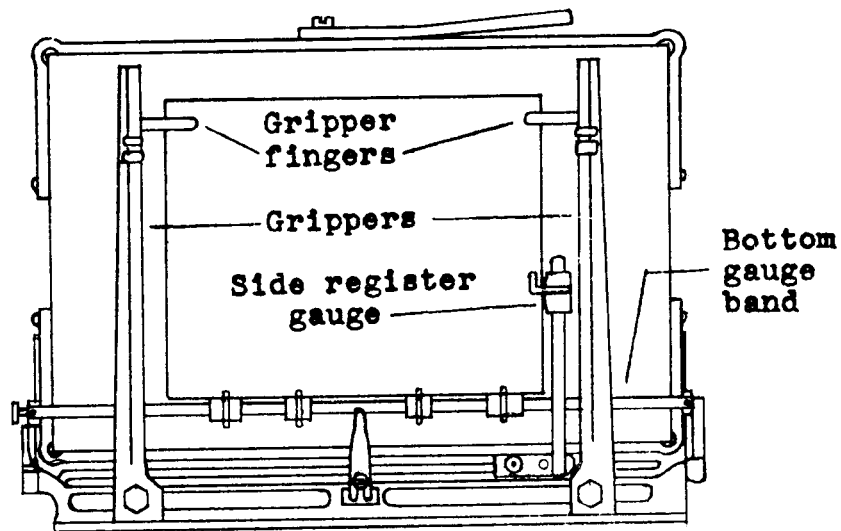
2. RAISE THE DELIVERY

Lock the delivery open with the delivery lock on the outside delivery track. Swing the delivery up to the right. Due to the use of friction joints, this can be accomplished without the use of wrenches.



3. LOCK THE FEEDING ARM HEAD

Lock the feeding arm head and raise the feeding arm. The operator must lock the feeding arm head before raising the feeding arm. Lock the head by lifting the right activating rod on the head as far as it will go and pulling down on the lock handle. Make sure that the pin on the eccentric is seated in the lock handle. Raise the feeding arm by releasing the feeding arm lock lever and swing the feeding arm over the top.



4. MAKE-READY

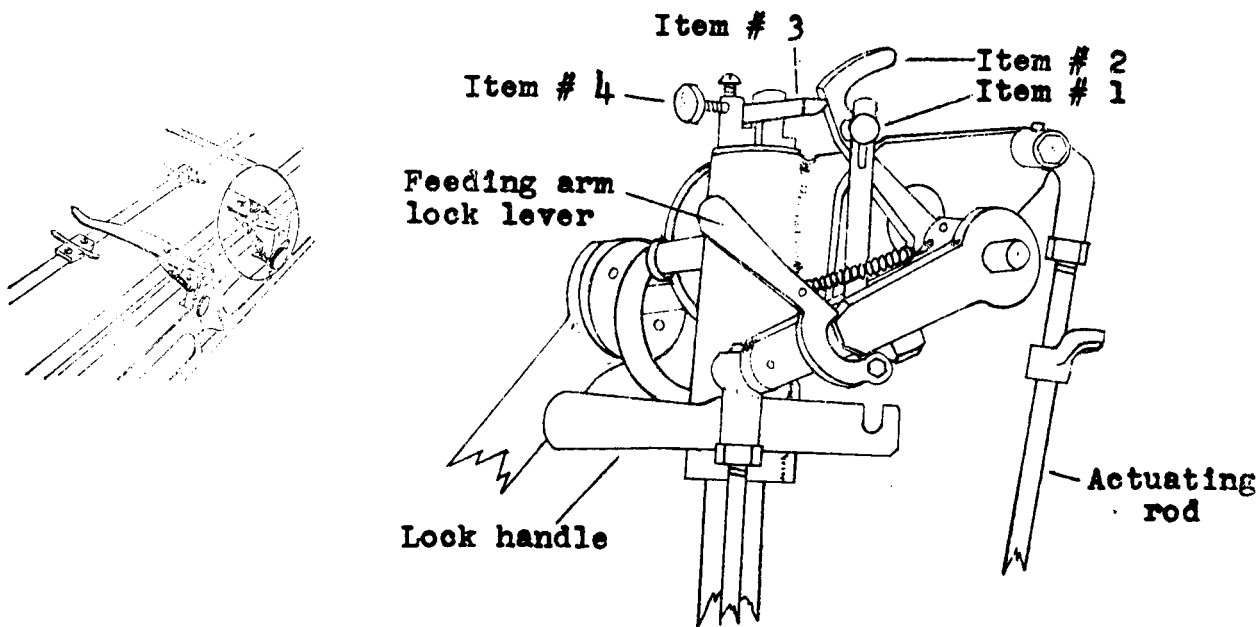
Turn the press over by hand until the grippers are all the way up. Remove the sheet holder tongue, and loosen the side register gauge assembly, lift the side register gauge assembly and tighten in a raised position. Loosen the bottom guide band. Lift both of the tympan bales. The front bale has a built-in lifter, and a lifter tool is provided for the back tympan bale.

Install new packing. The packing should consist of approximately (.040) forty thousandths of hard material of uniform thickness. The major portion should consist of pressboard, or photoengravers copper, or celluloid. The minor portion is usually S. & S. C. paper. Cover the packing with the tympan sheet. The speedset tympan sheet available from Brandtjen & Kluge, Inc. will enable the operator to change jobs faster, and more accurately. Be sure both tympan bales are securely locked. Install bottom guides, and release side register gauge.

Lock the form in the chase and install the chase in the press. Be sure that the chase hook is locked securely. Set the grippers, bottom gauge band, side register gauge, and gripper fingers to clear the form. Turn the press over by hand to be certain that there is no interference between the form and the printing surface of the platen. If you wish to pull an impression on the tympan sheet for purposes of make-ready, pull out the impression control button located above the speed control handle.

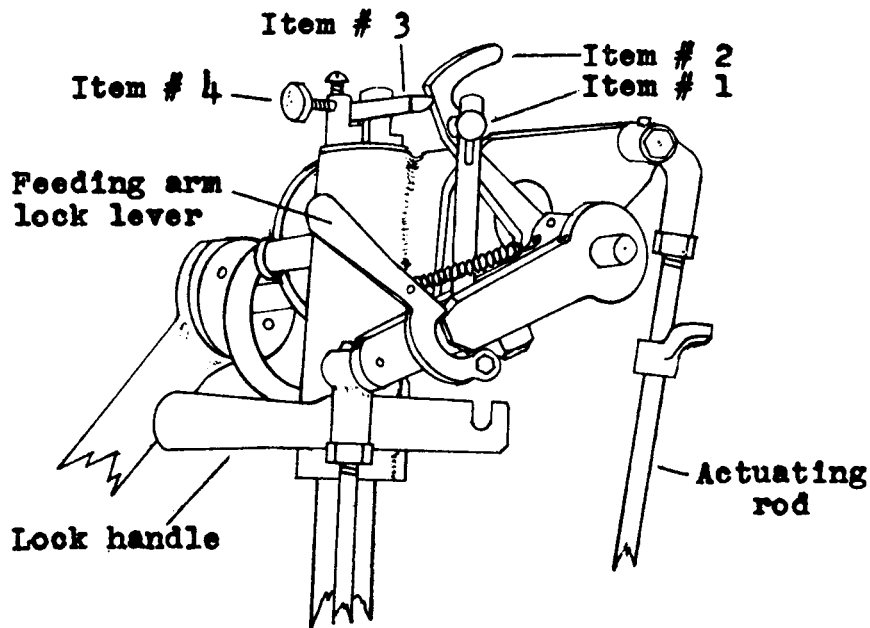
SET THE SHEET HOLDER TONGUE

Select a tongue that extends approximately one-half inch beyond the bottom gauges when the grippers are all the way up. Adjust the tension of the tongue so the stock will slide under it without buckling. This tension can be adjusted in one of two ways. The sheet holder mechanism has a built-in tension adjustment whereby the tension can be increased, or decreased by loosening a thumb screw and sliding the tension plate provided either up or down as desired. The tongue itself can be bent slightly to increase or decrease tension, or to change the angle of contact to the paper to permit better control. You will note that we also supply with the press a complete set of tongues with plastic tips. These will supply better sheet control on smooth finish stock.

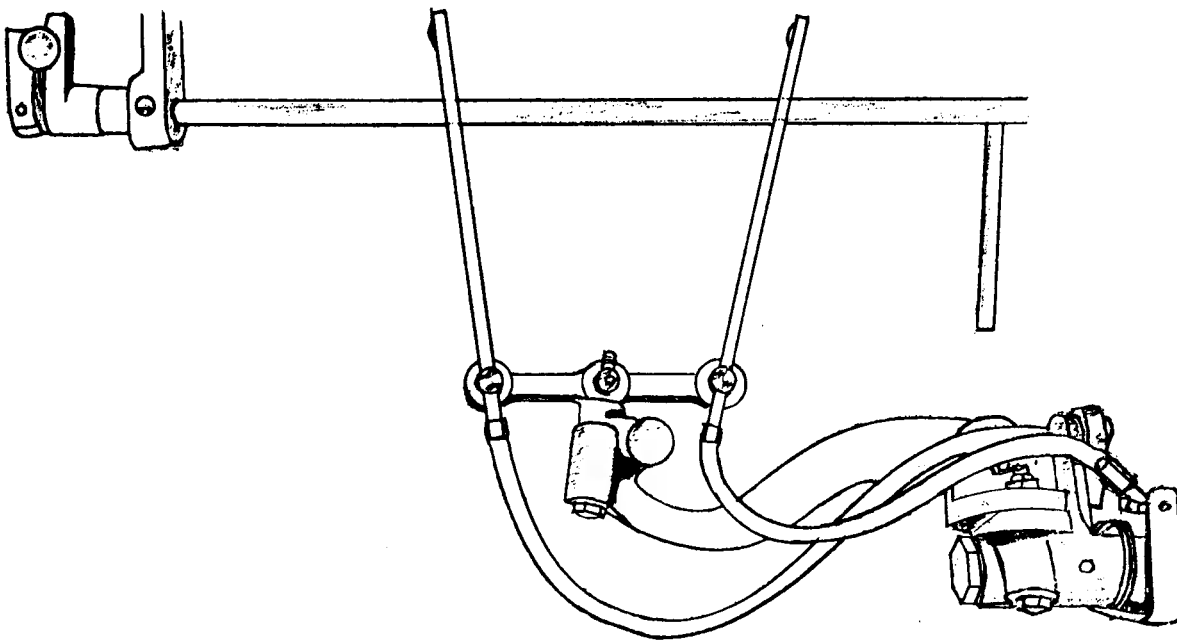


Unlock the feeding arm head and lower the feeding arm, swing the feeding arm down to operating position. It will automatically lock in the correct position. Grasp the right actuating rod to the head eccentric lock. Lower the rod gently. Allowing it to drop freely may not cause damage, but it does cause unnecessary strain on some parts, and this should be avoided. Turn the press by hand to be certain that the suckers on the feeding arm do not contact the bottom gauges. Space the bottom gauge blocks evenly along the band to catch the sheet, and space the feeding arm suckers to pass near them.

Use a dummy sucker next to the side register gauge to be certain that the sheet passes under the side register tongue. Cut a small V in the tympan sheet just below and to the right of the side register gauge to hold the sheet up so the gauge will register it properly. The V should, of course, face so that the point is towards the bottom gauge band.



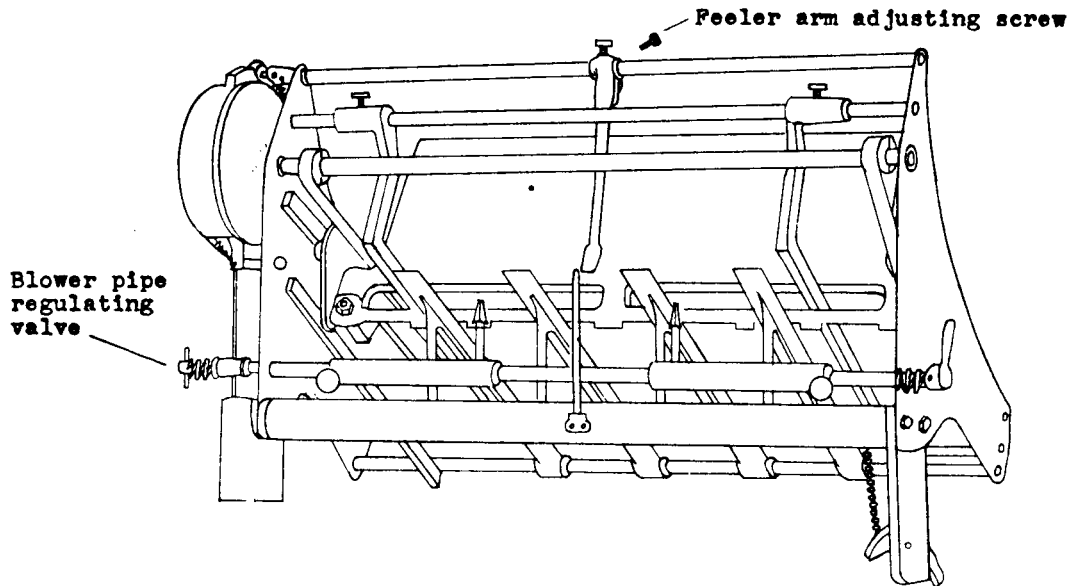
Set the air release valve. There are two separate adjustments for controlling the point at which the feeder arm releases the sheet. Large sheets should be released about 4 inches from the bottom gauge band. Turn the press over until the feeding arm is where the stock should be released. Loosen the thumb screw, (Item 1) as pictured above, and move the L shaped suction release lever (Item 2) to contact the trip lever (Item 3). While the press is in operation, adjust the thumb screw (Item 4) so the feeding arm feeds the sheets lightly to the bottom gauges.



SET THE DELIVERY

Swing the delivery arm down into operating position. Unlock the delivery while holding on to it to avoid having it slam into operating position. Turn the press over by hand until the delivery tubes are all the way in and all the way down. Adjust the location of the delivery tubes by moving the "S" shaped delivery cross arm backward, and forward, and by swinging the tubes to the desired location. Set the height of the delivery tubes with the leveling screw on the delivery tube crossbar. The delivery suckers should never be set tight against the sheet. Reset the height of the tips so they drop to within 1/16" of the platen. The vacuum will lift the sheet and float it out on a layer of air.

Set the side guides and back plate of the delivery table to guide the stock into a neat pile. Crank the delivery table up while holding the ratchet dog, next to the handle, up. Engage the ratchet dog by pressing it down. The delivery table will lower automatically.



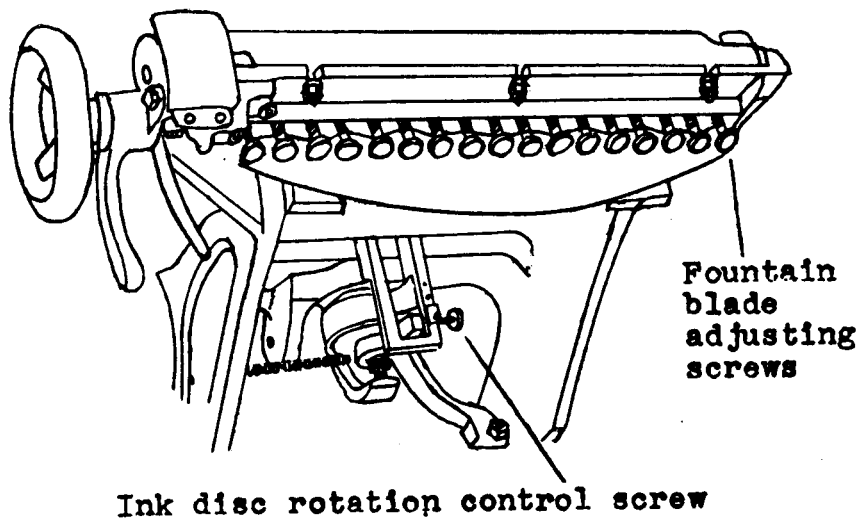
Adjust the thumb screw on the feeler arm to advance the stock within approximately $\frac{1}{4}$ " of the feeding arm suckers. Turn on the air supply to the blower valves with the valve at the end of the blower pipe. The blower outlets should separate the first few sheets in the magazine, and blow the first sheet out so the feeding arm will pick it up. Adjust the side comb springs on the magazine side guides so they allow only one sheet of stock to be fed at one time. Either curved face suckers, or rubber suckers may be desirable for use on the feeding arm depending on the stock to be handled. Curved metal tips are usually most desirable for use when running light, or flexible stock. Rubber suckers may be required for heavier or less flexible stocks.

SET THE MAGAZINE

Close the magazine and lock in closed position. Spread the right and left magazine stock guides as far as possible. If you are using our SPEED-SET tympan sheets, use the guide rules to set the magazine and delivery table guides. These are in line with each other. If you are not using our SPEED-SET tympan sheets, place a piece of stock on the platen $\frac{1}{8}$ " away from the side guide and turn the press over until the feeding arm suckers are next to the bottom of the sheet. Mark the sheet where the dummy sucker touches it. Remove the sheet from the platen and place it in the magazine with the back plate advanced. Turn the press over until the feeding arm dips into the magazine. Adjust the magazine side guide to position the stock using the mark and the dummy sucker as your guide.

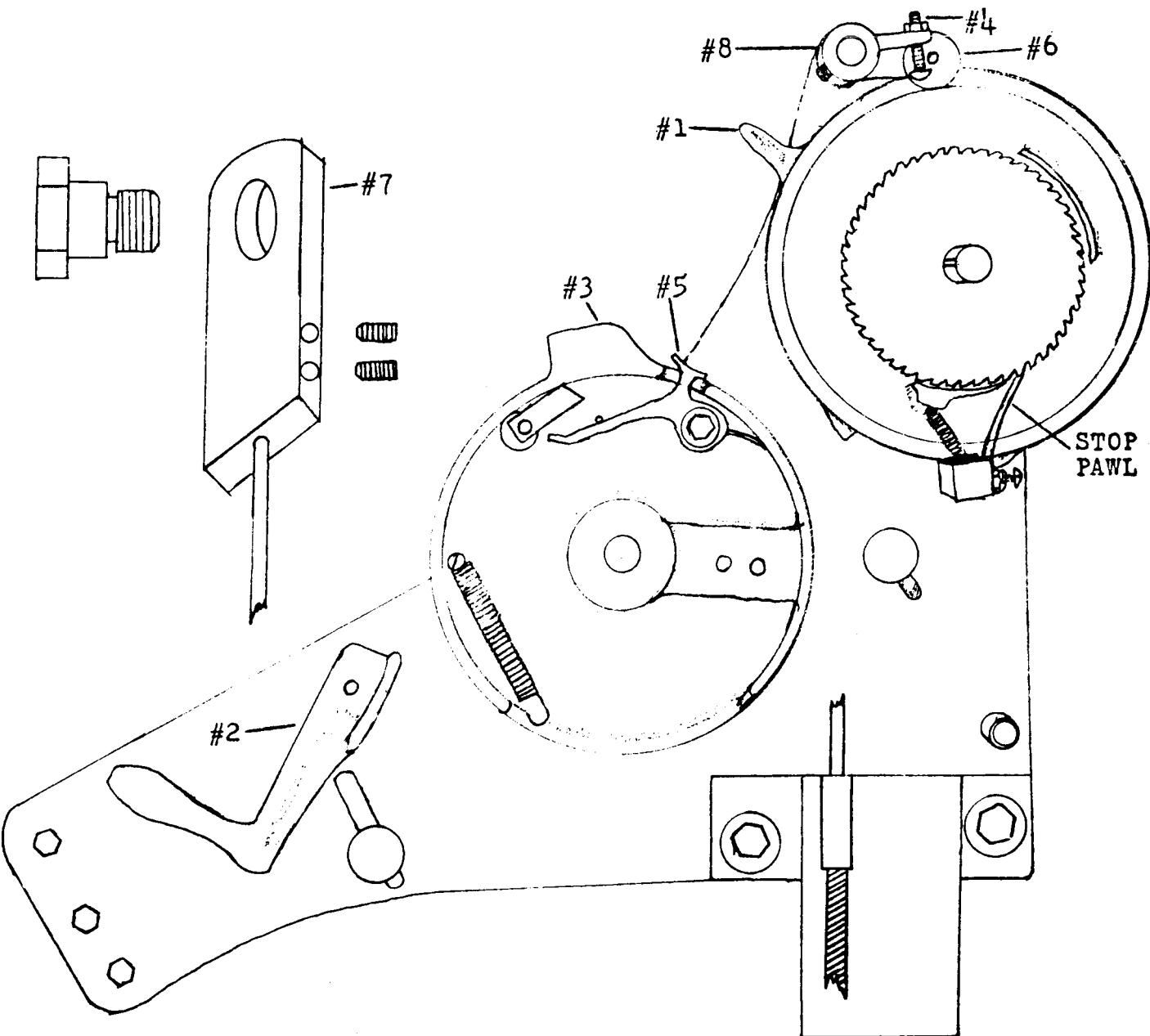
Fill the magazine. Release the elevator advancing plate by depressing the tab behind the elevator gear cover. Pull the advancing plate back and fill the magazine with stock. Raise the release tab to engage the magazine drive. Crank the handle counter clockwise to advance the stock to within $\frac{1}{2}$ " of the ends of the bottom rails.

Fill the fountain with ink and set the fountain blade with the adjusting screws to place a light film of ink on the fountain roller. Raise the ink disc by pushing down on the lever located under the left side of the ink disc. Turn the speed control handle counter clockwise as far as it will go. The press will now run at the slowest possible speed. Start the press and ink the form. If an impression is to be taken on the packing for purposes of checking make-ready, this can be done by pulling out the impression control located on the control panel.



Adjust the fountain, and ink disc rotation to get the desired ink coverage. The operator can control the amount of ink by adjusting the fountain blade with the adjusting screws. The amount of ink disc rotation can also be controlled by adjusting the thumb screw.

1. Pull the feed control cable out to feed stock. This cable is located on the right side of the control panel.



MAGAZINE OPERATING ADJUSTMENTS

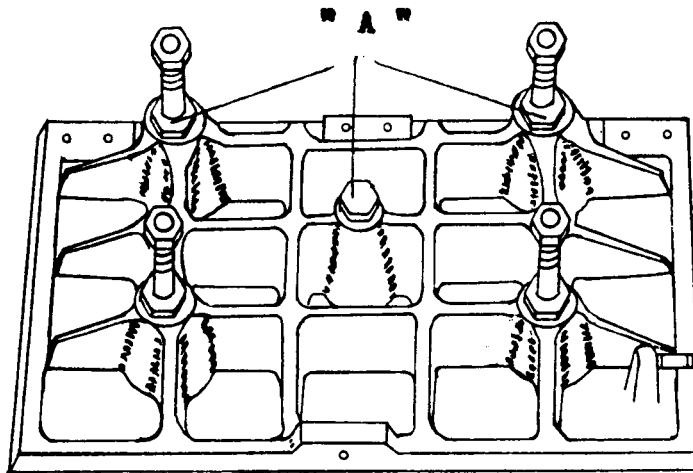
If the magazine is not advancing properly, the following information from our mechanics manual will be of assistance in correcting the difficulty.

Be certain that the linkage is properly adjusted, and is properly secured in both the top and bottom clamps. To adjust the length of the wire drive cable, turn the press over by hand until the feeding arm is at the bottom of the platen. Rotate the trip plate (Item 1) to the advance position. Make sure the handle, (Item 2) is rocked back setting the stop pawl inside the gear cover against one of the gear teeth. Put the end of the cable in the outside of the two mounting holes provided. Lift the feeding arm. The drive should click once when the suckers are about 5" from the magazine base rails. It is absolutely necessary that the stop pawl is seated against a tooth of the gear before lifting the feeding arm.

To adjust the stop pawl in the magazine drive mechanism when you do not get a click as indicated above, check the advance adjustment operated by the feeder arm. With the paper in the magazine back out of the way, the screw (Item 4) should be turned down enough to depress the tab (Item 5) completely, but not far enough to raise the roller (Item 6) off the flat surface in front of the ramp (Item 3). With this adjustment set correctly, adjust the length of the cable using the set screws in the attaching block, (Item 7) on the upper end of the cable so that the click occurs at the proper position of the feeding arm.

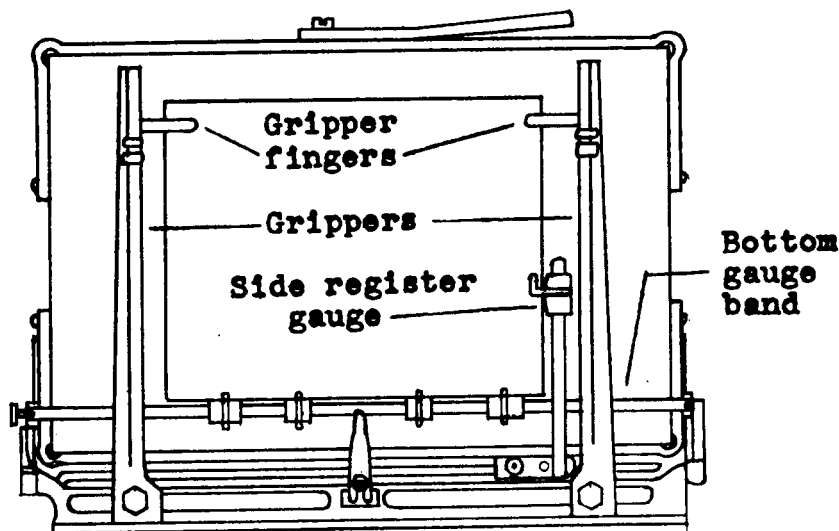
To adjust the feeler arm, back the adjusting screw on the feeler arm out 5 turns. Turn the press over until the feeding arm is all the way into the magazine. With the trip plate in advance position, crank the back plate just up to the suckers. Turn the press over until the feeding arm is all the way down on the platen. Loosen the set screw in the roller casting (Item 8), hold the feeler arm lightly against the magazine back plate by twisting the shaft on which the feeler arm is mounted. Move the casting (Item 3) on the shaft, so that the adjusting screw (Item 4) barely touches the tab (Item 5). Tighten the set screw in the casting.

Operate the press, and make sure the magazine back plate advances just to the suckers, and not further. This is very important, since if the magazine back plate advances too far, the back plate and feeding arm may be damaged. If this is not quite correct, move the adjusting screw (Item 4) slightly until you do have it set satisfactorily.



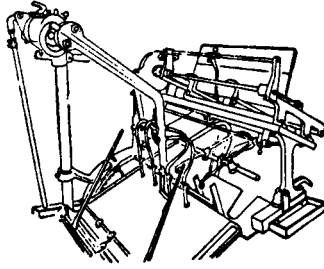
PLATEN ADJUSTMENT

There are five screws "A" which insure parallelism between the platen and the bed. It is recommended that you do not adjust these unless to compensate for different weight stocks. This, however, is an operating adjustment and will have to be cared for by the operator if and when the necessity for adjustment arises. The operator should not attempt to make-ready by tampering with the platen screws. It is a rare case, indeed, when these screws require adjustment.



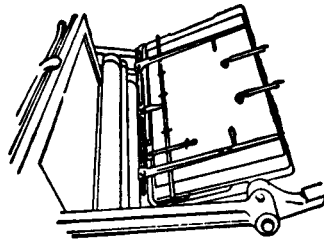
PATENTED GRIPPERS

Exclusive on the Kluge are the patented depressible grippers. These grippers hold the sheet in position on the platen from the instant it is registered until the delivery grasps it. They then open rapidly to the fullest extent during the feeding operation. Where there is not sufficient gripper margin, such as on ruled forms and "bleed" pages, it sometimes is necessary that gripper fingers be used to hold the sheet flat on the platen.



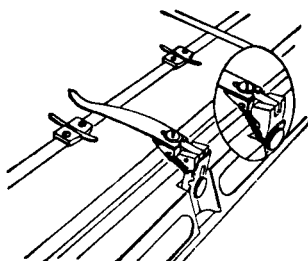
NEWLY DESIGNED FEEDING ARM

For 10x15 presses starting with serial number MA102153 and 12x18 presses starting with serial number NA125561-C, the following applies: The newly designed Feeding Arm is made of aluminum and there is but one adjustment for raising or lowering the feeding arm to compensate for varying weights of stock. This adjustment is made by simply releasing the two bolts at the point where the feeding arm is connected to the shaft which extends from the feeding arm head. When the arm has been set to the proper position, tighten the two bolts. The feeding arm will be properly lined up to the top and bottom of the platen at all times. It is to be remembered that the feeding arm should be set as close to the platen as possible.



BUILT-IN BOTTOM GAUGES

The new Kluge Built-in Bottom Gauges are a part of the Kluge Automatic Presses . . . 10x15 presses starting with serial number MA102153 and 12x18 presses starting with serial number NA125561-C. These gauges are fastened to a metal band which reaches from one side of the platen to the other. The gauges are adjustable and may be set to any position, on the band, which is desired. The adjustment of these gauges is made by releasing the screw on the gauge so that the gauge may be moved to the proper position. When the gauge has been properly set, tighten the screw. Kluge Built-in Bottom Gauges may be raised or lowered on the platen to provide for the proper setting of the sheet in relation to the form in the chase.



ADJUSTABLE SHEET HOLDER TONGUE

On 10x15 presses starting with serial number MA102153 and 12x18 presses starting with serial number NA125561-C, the instructions that follow govern the new Adjustable Sheet Holder Tongue: With the grippers "up" and with a sheet of the stock to be run hand fed to the proper position on the platen, select a sheet holder tongue which, when fastened to the sheet holder tongue assembly, found at the bottom center of the platen, will be ON the sheet approximately $\frac{1}{4}$ inch. Now pull the grippers better than half-way down . . . the tongue should be OFF the sheet. If the tongue is not OFF the sheet then select a shorter tongue to insure its being OFF the sheet before the side guide touches the sheet to move it to register. NOTE: The tongue must ride the tympan all the way . . . if it raises as the grippers are almost touching the platen, then adjust to the proper position by increasing or decreasing the tension on the spring as the case may be. The illustration shows the thumb screw with which to set the tension on the spring. It should be remembered that the sheet holder tongue is used only to hold the sheet from bouncing as it comes in with the feeding arm. The tongue should never be so tight against the tympan that it will keep the sheet from going under it.

SUGGESTIONS FOR THE OPERATOR

Presented on these pages are a number of helpful suggestions for the proper care of your Kluge Automatic Press. A careful study of these suggestions should assist you in getting the greatest efficiency out of your Kluge Automatic Equipment.

Adjustable Vibrators . . . The vibrators on the Kluge Automatic Press are adjustable and can be set for any degree of contact with the cast rollers, through the adjusting of two simple bearers on the roller saddle. The vibrators may be adjusted for any specific job.

Vibrator rollers should be kept oiled for longer life. Vibrators should be set evenly . . . in such a manner as to just "kiss" the cast rollers evenly all the way across. The adjustment for the vibrators is to be found on the roller assembly and is operated by releasing the two screws and setting the metal sliding fasteners to the desired position.

THE AIR SYSTEM

You will note that your Kluge Automatic Press is equipped with air filters. These should be removed and cleaned periodically. The body of these filters is made from transparent plastic so they can be visually inspected without being removed from the press.

The Air System . . . if the feeding arm or the delivery arm is blowing air instead of sucking air . . . the delivery arm may not be depositing the sheets in the correct manner on the delivery table, or if the suction is otherwise not operating properly, then it is an indication that the pump should be checked.

The condition, above, may sometimes be caused by a dirty pump. That usually can be corrected by flushing out the pump. Disconnect the metal hose at the base of the pump. Place a piece of cardboard or some rags in front of the pump at the point where the metal hose was disconnected. This will tend to absorb the dirt and kerosene as the pump is being flushed out. Now disconnect the two plastic hoses at the farthest end from the pump.

Pour kerosene into first one hose and then the other.

The action of the pump while the press is running will normally force out the dirt when the above method is followed. If this does not take care of the condition then it is possible that the pump will have to be dismantled for cleaning. It may be necessary to replace the brass pump valves, the various gaskets and seals, or the pump cups from time to time. If the pump is removed from the press, be certain that the stroke is properly set when the pump is replaced. The shaft of the pump should be screwed into the pump bearing and the press turned over by hand. If the pump piston strikes either the top or bottom head, the shaft should be adjusted accordingly. If this is not done carefully, major damage may be done.

PREVENTATIVE MAINTENANCE

Pulley: Service Instructions

The variable speed pulley supplied with your new Kluge Automatic Press has been thoroughly tested and should give many years of trouble free service. It will enable you to vary the speed of the press throughout the entire rated range of the press. Like any other piece of equipment, it will function only if it is maintained properly.

It must be kept properly lubricated. Any good light grade of grease is satisfactory, and if subjected to heavy use, it should be lubricated daily.

It should be run through the entire speed range at least twice daily. Starting at the lowest speed possible, and run up to the maximum speed at the beginning of each work shift, and at the end of each work shift.

If the pulley is not working properly, it probably needs cleaning. This can be easily accomplished by pumping kerosene through the grease fitting to dissolve any gum deposits, and then greasing the pulley.

If the following instructions are followed, this pulley should give excellent service. The motor should be lubricated regularly in accordance with the manufacturer's recommendation which accompanied the motor when it was shipped to you.

The other major point is to keep the machine clean since, otherwise, it could result in oil holes becoming plugged or covered with dirt and consequently missed. We suggest cleaning the press thoroughly at least once a month at which time all of the oil holes, oil cups, etc., should be examined to be certain that they are open. At the same time, the head valve assembly TG-8503 should be removed and thoroughly cleaned. The pump should be flushed out as described on the preceding page of this manual. During the process of cleaning the press, all bolts, nuts, etc., should be checked and tightened if they have become loose and in addition, the springs and hoses should be carefully inspected.

It is good practice to turn the fountain hand wheel #T-218 by hand before turning the power on to be certain that the fountain will turn freely. If this not done and the fountain tends to stick as a result of ink having become hardened between the fountain roller and the fountain blade or something of the sort, it will result in breakage to some parts of the fountain actuating mechanism.

SUGGESTIONS

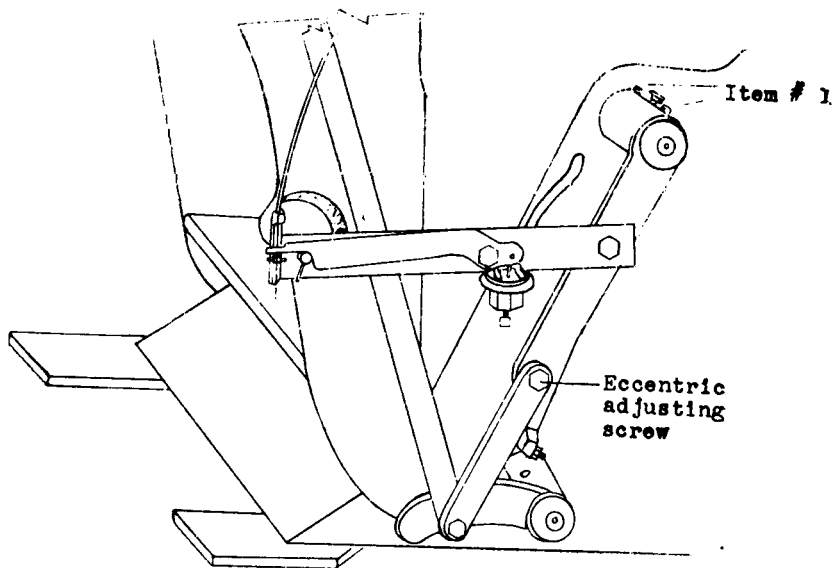
1. Never bolt your Kluge Press securely to the floor. Bolts may be used to hold the press in position, **BUT THESE BOLTS ARE NOT TO BE DRAWN UP TIGHT.** Mounting the press on felt pads is recommended, and these are available as optional equipment for Kluge Presses.
2. Do not stop the press by jumping on the foot brake. First, turn off the air by pushing in the feed control button on the control panel. Then turn off the motor switch, and **THEN** step on the brake. The motor, belt, and drive pulley will last longer if this procedure is followed.
3. When cutting stock to be run, be certain the knife on your paper cutter is sharp in order that a clean edge is assured. Paper cut with a dull knife will have a tendency to cling together, and the result will sometimes be two sheets being fed into the press at the same time.
4. Always select the correct speed for each job. Certain jobs will require different speeds, depending upon the stock used, type of ink, and register required.
5. On rare occasions it may be necessary to deliver a sheet with little or no white space. This can be done without smudging the ink by gluing a small piece of sandpaper to each of the delivery suction-tips and puncturing the paper to allow the air to get through.
6. The press should be oiled approximately every four hours of operation, and should always be oiled after standing idle for any extended period of time. Too much oil can do very little harm. Too little oil, or the incorrect type of oil can ruin a fine piece of machinery or cause costly repairs. We recommend the use of Kluge Safe Run Oil. You will note that through the use of numerous sealed ball bearings, we have eliminated much of the oiling time. For the first two or three weeks of operation, a 20 weight machine oil should be used. Thereafter, a 30 weight oil is proper for use. Any good grade of gear grease is satisfactory for the gears, and is also suitable for the variable speed pulley of your new Kluge.

Before turning on the motor, it is recommended that the following check list be used.

1. Has the press been properly lubricated.
2. Turn the fountain wheel by hand to be certain it is not binding.
3. Check both tympan bales to be sure they are locked securely.
4. Is the magazine locked shut.
5. Be sure the delivery mechanism is unlocked and eased into position.
6. Turn the press one complete revolution by hand to be certain that the feeding arm is properly set and that the suckers clear the bottom guides, and do not strike the delivery tubes, and nothing interferes between form and tympan.
7. Be sure that all of the friction joints for the delivery arm are properly tightened so they do not become loose during operation.
8. Be sure that the roller tracks are free of oil, and have sufficient friction to turn the rollers without slippage. It is important that the ball bearings at the end of the roller cores are cleaned regularly. It is good practice to soak the ball bearings in kerosene at night, and oil them thoroughly with a light machine oil before operating.
9. Be sure that the roller core ball bearings are locked in position with the locks provided in the roller saddles.
10. Remove rollers for perforating.

When you are shutting the press off for several hours, or overnight, it is recommended that the following items be checked.

1. Remove the rollers from the press and wash them or drop disc and wash disc and rollers.
2. Remove the form from the press unless it is going to be run again, but in any case, clean the form of ink so that it will not dry on the face of the form.
3. If you are using an ink which will harden, clean the fountain thoroughly.
4. When stopping the press for more than an hour or so, be sure that the rollers are not resting on the form, or the fountain. If they are on the ink disc, drop the disc. This procedure will prevent the rollers from unnecessary strain and prolong their life.



THROW-OFF

The principle of the throw-off is that if the feeding arm fails to take a sheet, the press will "throw-off" to avoid printing on the tympan. If the feeding arm fails to take a sheet from the magazine, the suction tips (not having a sheet of paper across them) will not create a vacuum. If there is no vacuum, there is no suction exerted on the diaphragm of the throw-off mechanism.

When the suction tips are sealed, the vacuum created will cause the diaphragm to be drawn up. When the diaphragm is drawn up, the press continues to operate in a normal printing position. If the diaphragm drops because of a lack of suction, it causes a lock to drop over a pin which (on that revolution of the press) will exert pressure on the mechanism and cause the press to throw off.

WHAT TO LOOK FOR IF THE PRESS FAILS TO PRINT

If the press fails to throw-off and prints on tympan, see that all connections and bearings are free and not binding.

If the press throws off continually, check all air lines and hose connections and throw-off valve and diaphragm for leaks.

If the throw-off tends to slam heavily on impression, this indicates that the friction adjustment needs tightening. The two set screws (Item 1) have friction plugs under them. By tightening these set screws, the amount of friction can be increased. These plugs should be removed, and checked periodically, since over a period of time they will wear away and require replacement.

ALIGNING MOTOR

It is important to have the flywheel and the motor pulley aligned correctly. If they are not, it will result in rapid wear to the belt and unnecessary strain on the motor pulley. This should be checked periodically to be certain that the motor base is not loose on its mountings and has not shifted to allow improper alignment.

When installing a replacement motor, belt, or motor base, the motor base should first be aligned as closely as possible. The motor should then be fastened in place. The motor pulley should then be properly aligned with the flywheel. This pulley is held in place by three set screws and a key on the motor shaft. After the motor pulley and flywheel are properly aligned, the bolts holding the motor base, the motor, and the set screws holding the pulley should be tightened securely.

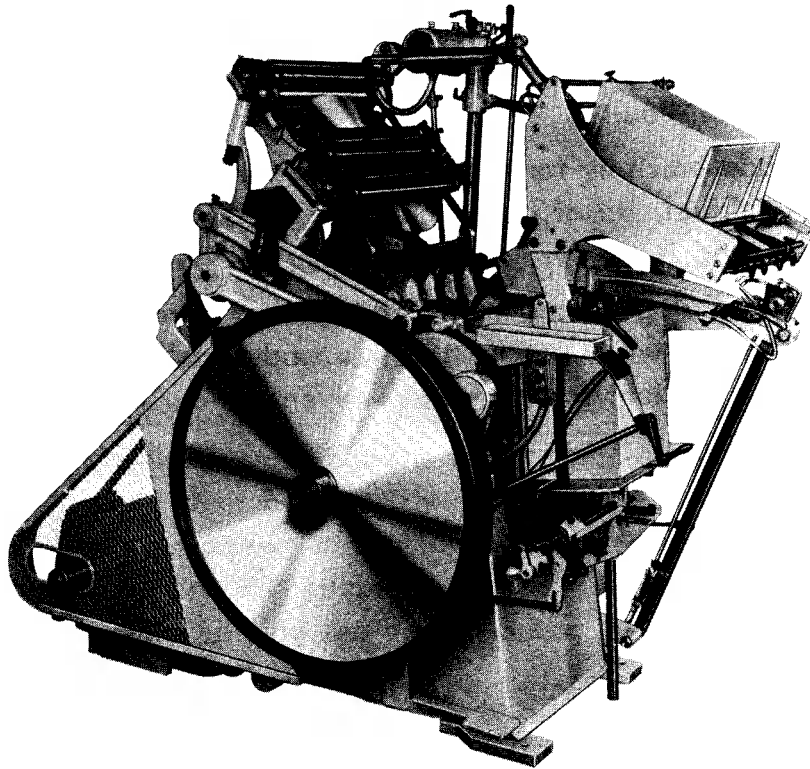
When replacing the belt and pulley guard, be sure that the belt does not scrape against it. The brackets, and the belt and pulley guard have been properly set at the factory; however, when reinstalling these, it often is necessary to slightly reshape the brackets to assure proper clearance between the belt, pulley, and the guard.

SERVICE

There is a Brandtjen & Kluge branch office located in your territory. Your order for repair parts and service may be sent to the branch office nearest your city or it can be sent to us here at St. Paul.

Kluge parts are made precisely for the Kluge Automatic Press and the Kluge feeder. Each part is an individual unit of the machine for which it was intended . . . therefore, it fits, wears, and is as durable and dependable as the original part itself.

Refer to your parts catalog whenever it is necessary to order a part for your Kluge and order by number. Always specify the size and serial number of your feeder or press. Prompt and efficient service will be given to your requests.



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